

**CLAIMS**

1. A laying head for forming coils using continuous and substantially rectilinear rolled products comprising a support structure (2), a rotor (3) adapted to rotate about its own axis (X) under the action of motor means and held in rotation by the support structure (2) by means of two bearings (4), characterised in that at least one of the bearings (4) incorporates vibrations damping means.
2. Laying head according to claim 1, wherein each of the bearings (4) incorporates vibrations damping means.
3. Laying head according to claim 1 or 2, wherein the damping means comprise a plurality of coils (6, 6', 6'') arranged around the rotor (3) in proximity of said bearing (4), the coils (6, 6', 6'') being adapted to produce a magnetic field under the action of control means, said magnetic field creating a force substantially perpendicular to the axis (X) and of a predetermined intensity so as to eliminate the inertial forces generated by the masses of the rotor during rotation about the axis (X).
4. Laying head according to claim 3, wherein the plurality of coils (6, 6', 6'') is arranged along a hemicycle of the rotor (3).
5. Laying head according to claim 4, wherein the plurality of coils is arranged along the entire circumference of the rotor.
6. Laying head according to claim 3, wherein the coils (6, 6', 6'') are arranged in a plane substantially perpendicular to the axis (X) and which intersects said axis (X) in a zone intermediate to the two bearings and in proximity of a first of these (4).
7. Laying head according to claim 6, wherein the coils (6, 6', 6'') are arranged in series between the first bearing (4) and the support structure (2).
8. Laying head according to claim 6, wherein the coils (6, 6', 6'') are arranged in parallel between the rotor and the support structure (2).
9. Laying head according to claim 1 or 2, wherein said vibrations damping means comprise a oil film bearing (10).
10. Laying head according to claim 9, wherein the oil film bearing is of the hydrodynamic type.
11. Laying head according to claim 10, wherein, in proximity of a rolled product inlet side, at least one axial type hydrodynamic bearing is provided.
12. Laying head according to claim 10, wherein said hydrodynamic bearing (10) is of the "tilting pad" type.

13. Laying head according to claim 10, wherein said hydrodynamic bearing (10) is of the lobed type.

14. Laying head according to claim 13, wherein in said hydrodynamic bearing (10) there are provided three lobes.

5 15. Laying head according to claim 13, wherein in said hydrodynamic bearing (10) there are provided two lobes.

16. Laying head according to claim 15, wherein the arrangement of the lobes on the bearing is asymmetrical.

10 17. Laying head according to claim 9, wherein the oil film bearing (24) is of the "squeeze film" type.

18. A method for vibrations damping of a laying head implemented on the laying head of claim 3, comprising the following steps:

15 a) determining by means of sensors of dynamic parameters relative to the vibrations produced by the rotor during a rotation thereof on the support structure;

b) transmitting predetermined data, relative to the dynamic parameters, to electronic control means;

20 c) defining activation modes of magnetic coils so that magnetic forces are produced, the resultant of which is such as to eliminate inertial forces producing vibrations in the rotor.